5c)

A

b = 18.2

a = 16.3

61° ②

54° B

65° ①

a

A

✓ *SSA
✓ acute ∠
✓ a < b

$h = b \sin A$

$h = 18.2 \sin 54$

$h = 14.7$

a vs h

$16.3 > 14.7$

→ $a > h$ → 2 solutions *
$a = h$ ⇒ 1 solution
$a < h$ ⇒ No solutions

$\frac{\sin C}{18.2} = \frac{\sin 54}{16.3}$

$\sin^{-1} \sin C = 0.9033$

$\sin^{-1} 0.9033$

X ∠C = 65°

∠A = 61°

$\frac{a \sin 61}{\sin 61} = \frac{16.3 \sin 61}{\sin 54}$

UR

a = 17.6

∠C = 180 - 65
∠C = 115°

∠A = 11°

A

18.2   11°

16.3

54° 115°

B   a   C
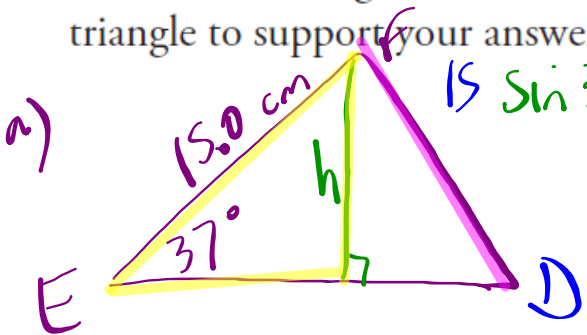
$\frac{a \sin 11}{\sin 11} = \frac{16.3 \sin 11}{\sin 54}$

a = 3.8

5. In $\triangle DEF$, $EF = 15.0$ cm and $\angle E = 37°$.

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   a) Calculate the height of the triangle from base ED.

   b) Determine the possible lengths of side FD, so that there are zero, one, or two triangles that satisfy these conditions. Draw each triangle to support your answer.

a)

$15 \sin 37 = \dfrac{h}{15}$

$= h$

$h = b \sin A$

$h = 15 \sin 37°$

$\boxed{h = 9.1}$

a   vs   **h**

b)

zero $a <$ 9.0

Ambiguous / solution $a = h$ ✗

2 solutions $a > 9.0$

Review for Test - Lots of Practice from the Textbook!!!

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